To our customers,

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Renesas Electronics website: http://www.renesas.com

April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (http://www.renesas.com)

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M38C59T-RLFS

Emulator MCU Board for 38C5 Group

User's Manual

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Rev.1.00
January 16, 2004
REJ10J0415-0100Z

Renesas Technology
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1. Outline

The M38C59T-RLFS is an emulator MCU board for the 38C5 Group.

2. Package Components (See Figure 1)

(1) M38C59T-RLFS ..... 1 pc.
(2) M3T-F160-80LCC converter board (preinstalled) ..... 1 pc.
(3) M38C59T-RLFS User's Manual (This manual) ..... 1 pc.
(4) M38C59T-RLFS User's Manual (Japanese)..... 1 pc.

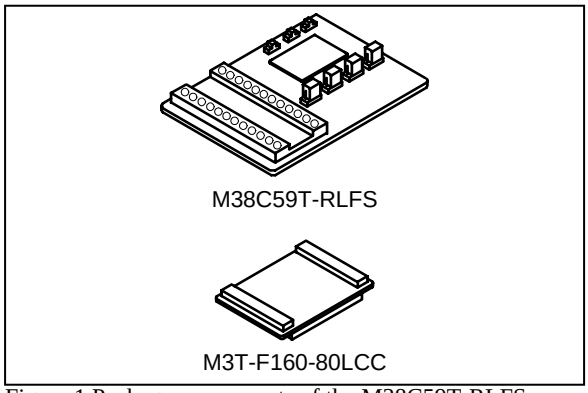

Figure 1 Package components of the M38C59T-RLFS

3. Specifications

Table 1 Specifications

Emulator	PC4701 + M38000TL2-FPD M38000T2-CPE
Operation mode	Single-chip mode
Max. operating frequency	Vcc = 4.5 to 5.5 V: 12.5 MHz Vcc = 4.0 to 5.5 V: 8 MHz Vcc = 1.8 to 5.5 V: 6 MHz
Operating power voltage	1.8 to 5.5 V

4. Connection Procedure (See Figure 2)

The procedure for connecting the M38C59T-RLFS is shown below.

(1) Mount an LCC socket on the target system.
(2) Attach the M3T-F160-80LCC to the M38C59T-RLFS (preinstalled).
(3) Attach the tip of the probe of the emulator to the M38C59T-RLFS.
(4) Attach the M3T-F160-80LCC to the LCC socket.

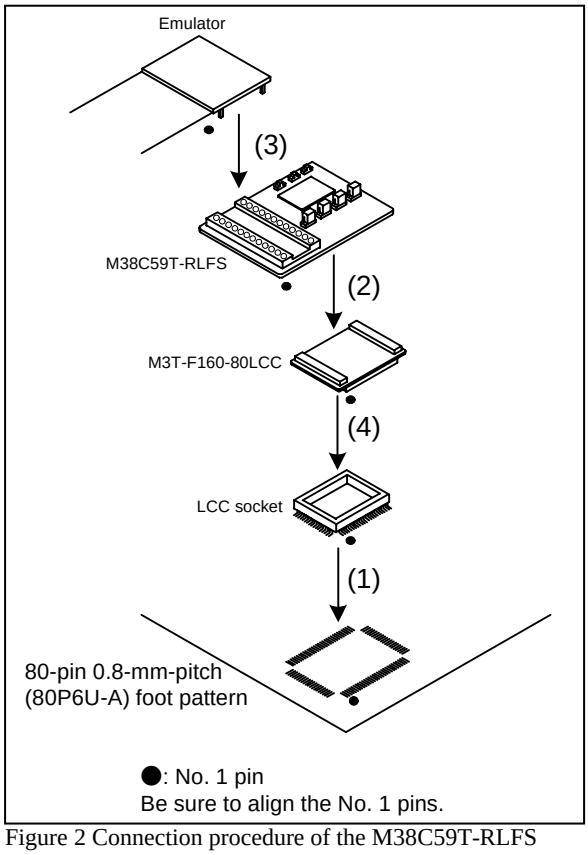

Figure 2 Connection procedure of the M38C59T-RLFS

Before using the M38C59T-RLFS, be sure to read "7. Precautions" on page 4.

5. Oscillator Circuit (See Figure 3)

This product has two oscillator circuit patterns for the main clock XIN and sub-clock XCIN.
Select one of them according to the oscillator circuitry of the target system.

(1) When using the internal oscillator circuit of the MCU:

The oscillator circuit on the target system may not oscillate because a converter board is used between the emulator MCU and the target system. In this case, set the jumper switch to INT and mount an oscillator circuit on the M38C59T-RLFS's oscillator circuit pattern. When using the oscillator circuit on the target system, be sure to set the jumper switch to EXT.

(2) When using an oscillator module IC etc. (self-oscillation):

It is not necessary to mount an oscillator circuit on the M38C59T-RLFS's oscillator circuit pattern.

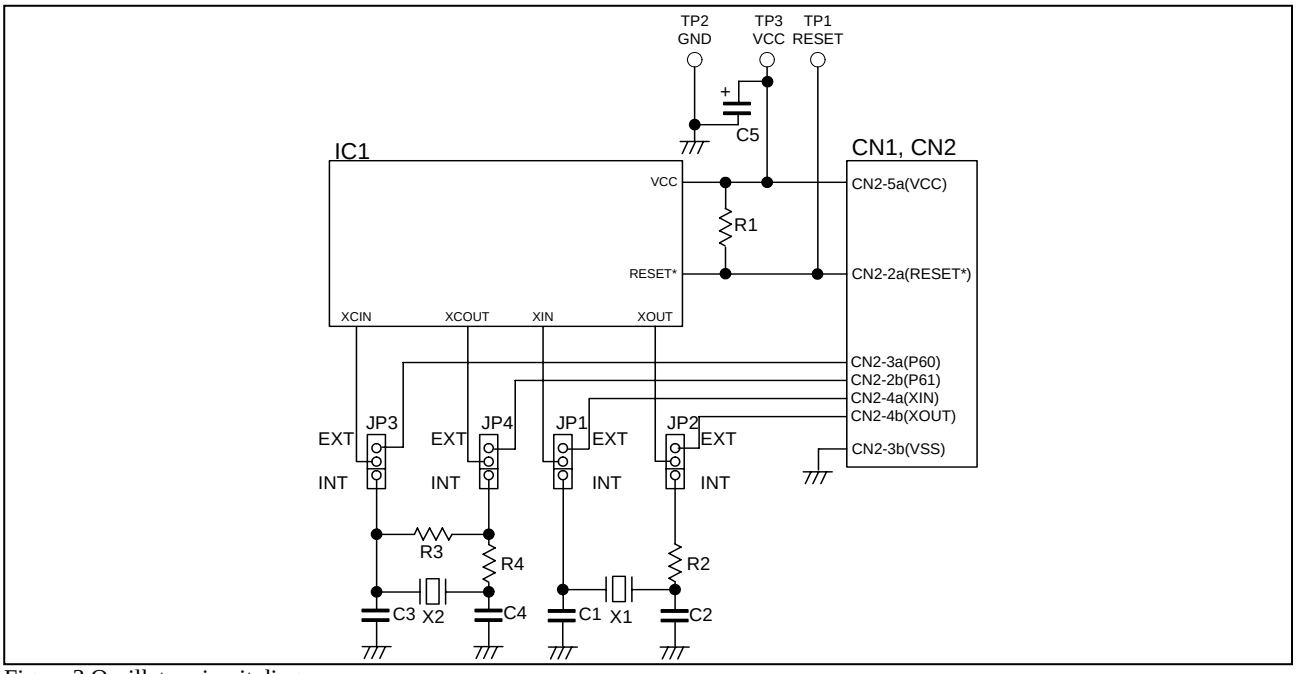

Figure 3 Oscillator circuit diagram

6. Oscillator Circuit Pattern

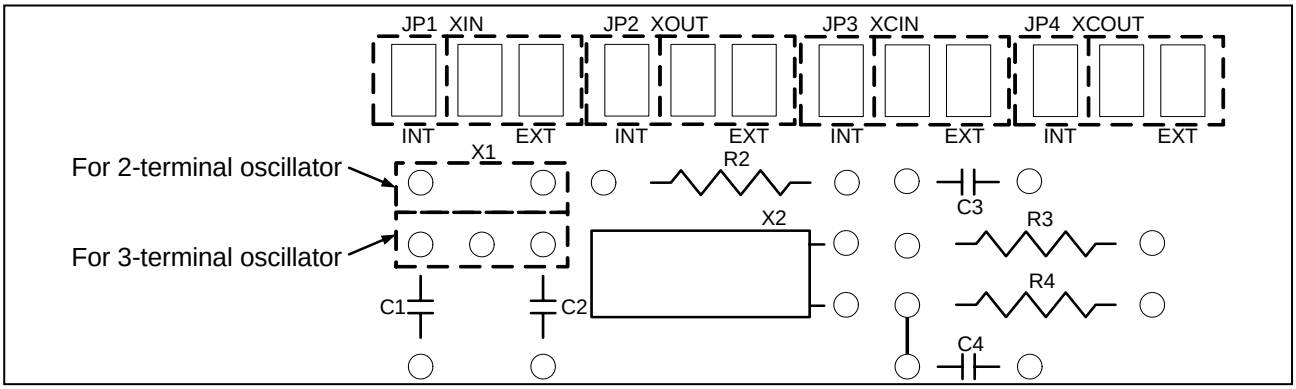

Figure 4 Oscillator circuit pattern

7. Precautions

IMPORTANT

Notes on This Product:

- We cannot accept any request for repair.
- When using the oscillator circuit on the M38C59T-RLFS, check the output waveform of pins X_{OUT} and X_{COUT} by an oscilloscope.
- When mounting an oscillator circuit on the M38C59T-RLFS, make sure that 2 mm or more of a DIP pin does not appear on the rear face (solder side). It may be short-circuited with the DIP pin of the converter board.
- For inquiries about the product or the contents of this manual, contact your local distributor.
  Renesas Tools Homepage http://www.renesas.com/en/tools

8. External Dimensions

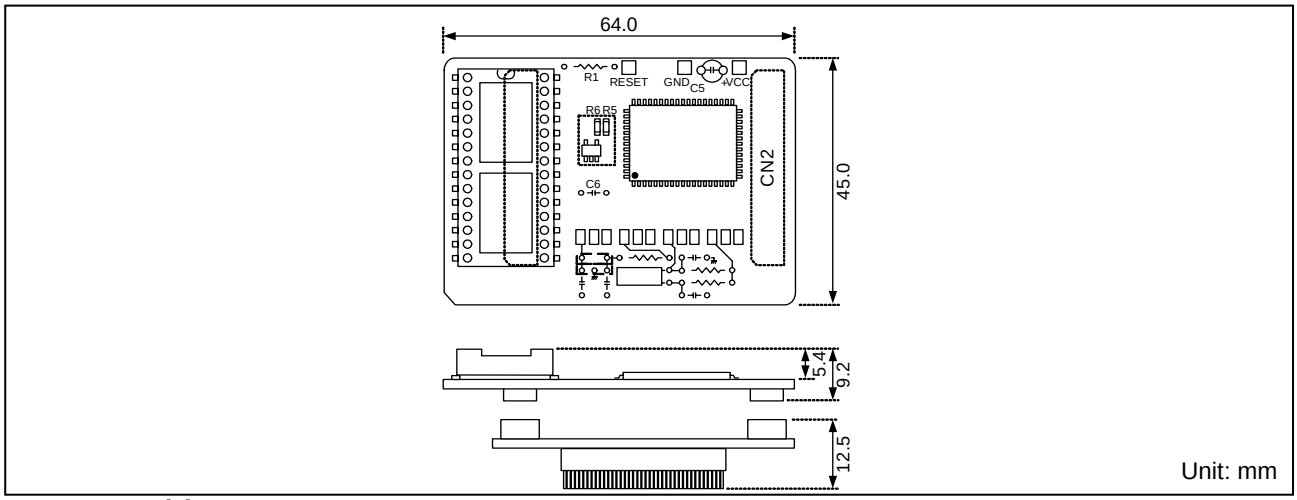

Figure 5 External dimensions

9. Connecting to the Target System

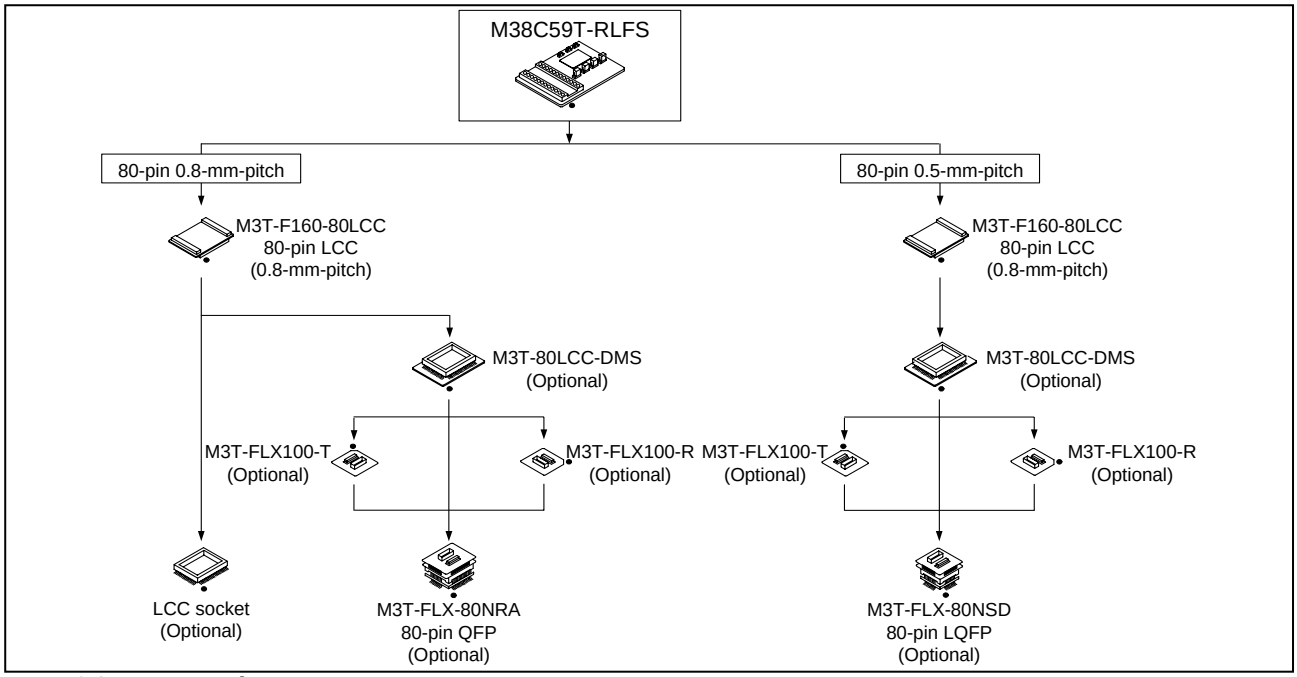

Figure 6 Connecting to the target system